

Agenda

10:00am – 12:00 noon
April 20, 2007

- **MLS Allocation Study (Holly Liu)**
 - Methodology
 - Q&A
 - Results
 - Q&A

- **LMP Study Update (Jim Price)**



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Regional Marginal Loss Surplus Allocation Impact Study

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April 20, 2007

Background

- February 9, 2006 MRTU Tariff (Filed Methodology)
 - CAISO proposed to allocate system-wide MLS pro-rata to Measured Demand

- Reply Comments to the MRTU Filing
 - CAISO committed to undertake a study to compare distributional impact of allocating MLS to Demand on a “regional” versus “system-wide” allocation basis

- FERC September 21, 2006 Order
 - FERC accepted the CAISO filed methodology of allocating system-wide MLS to Measured Demand



Overview of Study Efforts

- White Paper on Proposed MLS Study Methodology (July 2006)
 - Stakeholders agreed on proposed methodology

- Progress Report with Interim Results (August 2006)
 - Made simplifications to the method proposed in the July 2006 white paper to get initial indications of the level of impact

 - Included only 5 months of LMP results (May through Sept. 2004)

Overview of Study Efforts (Continued)

- Final Report (April 2007)
 - Completed the MLS allocation study following the methodology proposed in the July 2006 white paper (without simplification)
 - Used 12 months of LMP results (May 2004 through April 2005)

Agreed-Upon Scope of the Study

- Determine the impact of regional vs system-wide allocation of MLS to Measured Demand.
- Two Regions are considered in the study: Northern Region (NP15 plus ZP26) and Southern Region (SP26)
- The study will cover a period of 12 months

Filed Methodology

– System-Wide MLS Allocation to Measured Demand

- System-Wide MLS

system-wide MLS = system-wide marginal loss costs
– system-wide actual loss costs

- System-Wide MLS is allocated to measured demand in NP26 and SP26

NP26 MLS = system-wide MLS × (measured demand in NP26 / system-wide measured demand)

SP26 MLS = system-wide MLS × (measured demand in SP26 / system-wide measured demand)

Measured Demand = Internal Demand + Exports



Alternative Regional Approach

- First, actual and marginal loss costs in NP26 and SP26 are calculated

- Second, two bookends are considered to address uncertainty regarding cause of losses in each region
 - Path 26 Adjustment
 - No Path 26 Adjustment

Alternative Regional Approach (Continued)

■ Path 26 Adjustment

- Transmission losses in one region incurred to serve demand in the other region are estimated and transferred to the other region.
- This amount is estimated based on the direction and magnitude of Path 26 flow.

■ No Path 26 Adjustment

Interim Results (August 2006)

- Simplifications
 - Measured demand was determined by internal demand only, exports were not included
 - Path 26 flows were estimated
 - Path 26 adjustment factor was computed only for N-S flow direction
 - Did not attempt to shift marginal losses on Path 26 between regions
- Used 5 months of LMP study data (May through Sept. 2004)
- MLS allocation to NP26
 - Filed Methodology: \$60 million
 - Alternative Regional Approach: \$62 ~ \$73 million

Final Results (April 2007)

- Used 12 months of LMP study data
(May 2004 through April 2005)

- Used methodology as agreed in July 2006 stakeholder meeting and white paper (no simplifying assumptions)

- MLS allocation to NP26
 - Filed Methodology: \$124 million
 - Alternative Regional Approach: \$121 ~ \$128 million

Results

Marginal Loss Surplus Allocation, May 2004 ~ April 2005.

	System MLS	System Load Ratio Method (Filed Methodology)		No Path 26 Adjustment Bookend		Path 26 Adjustment Bookend	
		NP26	SP26	NP26	SP26	NP26	SP26
May-04	\$22.1	\$9.9	\$12.2	\$10.4	\$11.7	\$10.2	\$11.9
Jun-04	\$25.3	\$11.8	\$13.5	\$13.5	\$11.7	\$12.9	\$12.4
Jul-04	\$29.6	\$13.9	\$15.8	\$15.1	\$14.5	\$14.1	\$15.6
Aug-04	\$28.9	\$13.5	\$15.4	\$15.1	\$13.8	\$14.3	\$14.6
Sep-04	\$22.7	\$10.3	\$12.4	\$11.5	\$11.2	\$11.1	\$11.6
Oct-04	\$20.4	\$9.5	\$10.9	\$9.6	\$10.8	\$8.7	\$11.7
Nov-04	\$19.7	\$9.4	\$10.3	\$8.4	\$11.2	\$8.0	\$11.7
Dec-04	\$22.9	\$10.7	\$12.2	\$10.4	\$12.5	\$9.5	\$13.4
Jan-05	\$19.3	\$9.6	\$9.7	\$9.5	\$9.8	\$9.3	\$10.0
Feb-05	\$17.3	\$8.3	\$9.0	\$8.2	\$9.0	\$7.8	\$9.5
Mar-05	\$18.5	\$8.7	\$9.8	\$8.0	\$10.4	\$7.4	\$11.1
Apr-05	\$17.9	\$8.5	\$9.4	\$8.4	\$9.5	\$7.8	\$10.1
Total	\$264.5	\$124.0	\$140.6	\$128.3	\$136.3	\$121.1	\$143.5



CAISO Proposal and Recommendations

- The allocation results based on the filed methodology fell in between the two bookends using the regional approach.
- The CAISO proposes not to change its filed methodology and/or Release 1 software at this time.
- The CAISO will monitor the actual allocation results using the same study methodology after the start of MRTU to determine if a change in its filed method and/or Release 1 software might be appropriate based on actual market results.



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Appendix

Results (Continued)

Marginal Loss Surplus Rebate Rates (\$/MWh Load), May 2004 ~ April 2005.

	System MLS	System Load Ratio Method (Filed Methodology)		No Path 26 Adjustment Bookend		Path 26 Adjustment Bookend	
		NP26	SP26	NP26	SP26	NP26	SP26
May-04	\$1.03	\$1.03	\$1.04	\$1.08	\$1.00	\$1.06	\$1.01
Jun-04	\$1.15	\$1.15	\$1.14	\$1.32	\$1.00	\$1.25	\$1.05
Jul-04	\$1.18	\$1.18	\$1.19	\$1.29	\$1.09	\$1.20	\$1.17
Aug-04	\$1.17	\$1.17	\$1.16	\$1.31	\$1.04	\$1.24	\$1.10
Sep-04	\$0.98	\$0.97	\$0.98	\$1.09	\$0.88	\$1.05	\$0.91
Oct-04	\$0.98	\$0.98	\$0.98	\$0.99	\$0.97	\$0.90	\$1.05
Nov-04	\$0.98	\$0.98	\$0.98	\$0.88	\$1.07	\$0.83	\$1.11
Dec-04	\$1.07	\$1.07	\$1.07	\$1.03	\$1.10	\$0.94	\$1.18
Jan-05	\$0.92	\$0.93	\$0.92	\$0.92	\$0.93	\$0.90	\$0.95
Feb-05	\$0.92	\$0.93	\$0.92	\$0.92	\$0.92	\$0.87	\$0.97
Mar-05	\$0.91	\$0.91	\$0.91	\$0.84	\$0.97	\$0.77	\$1.03
Apr-05	\$0.90	\$0.90	\$0.90	\$0.89	\$0.91	\$0.83	\$0.96
<i>Total</i>	\$1.02	\$1.02	\$1.02	\$1.06	\$0.99	\$1.00	\$1.04

Path 26 Adjustment

- If Path 26 flow is N-S
 - Allocate Path 26 losses and marginal losses and a fraction (P26 NS Factor) of Northern Region losses and marginal losses to the Southern Region
 - $P26\ NS\ Factor = \frac{\text{Path 26 Flow}}{\text{NR Demand} + \text{Path 26 Flow}}$

- If Path 26 flow is S-N
 - If Path 26 flow is S-N, allocate Path 26 losses and marginal losses and a fraction (P26 SN Factor) of Southern Region losses and marginal losses to the Northern Region
 - $P26\ SN\ Factor = \frac{\text{Path 26 Flow}}{\text{SR Demand} + \text{Path 26 Flow}}$

Regional Allocation of Losses - Path 26 Adjustment versus No Path 26 Adjustment

Table 1A. Marginal Loss Surplus Allocation (Path 26 Flow is North to South).

	No Path 26 Adjustment		Path 26 Adjustment	
	Actual Loss	Marginal Loss	Actual Loss	Marginal Loss
NP26	Unadjusted NP26 Actual Loss = NP26 Actual Loss (excluding Path 26 Actual Loss)	Unadjusted NP26 Marginal Loss = NP26 Marginal Loss - Path 26 Marginal Loss	Unadjusted NP26 Actual Loss * (1 - Path 26 NS Factor)	Unadjusted NP26 Marginal Loss * (1-Path 26 NS Factor)
<i>Direction of Path 26 Flow is North to South</i>				
SP26	Unadjusted SP26 Actual Loss = SP26 Actual Loss + Path 26 Actual Loss	Unadjusted SP26 Marginal Loss = SP26 Marginal Loss + Path 26 Marginal Loss	Unadjusted SP26 Actual Loss + Unadjusted NP26 Actual Loss*Path 26 NS Factor	Unadjusted SP26 Marginal Loss + Unadjusted NP26 Marginal Loss*Path 26 NS Factor